Year and Program: FY, M.Sc.   **School of Science**   **Department: Mathematics, Chemistry & Physics**

Course Code – REM 502   **Course Title – Research Methodology-II**   **Semester – II**

Day and Date – Saturday 28/12/19   **End Semester Examination**   **Time:** 1/2 hr 10.30am to 11.
    Max Marks: 100

PRN number –   **Seat no-**   **Answer Booklet No.-**

Students' Signature -   **Invigilator's Signature:**

Marks for section A out of 20:

Instructions:

1) All questions are compulsory.
2) For MCQs mark/tic (√) for correct answer. No marks for multiple ticks(√)
3) Section A should be submitted to Jr. Supervisor immediately after first 30 min
4) Use Blue ball pen only.

Section A

Q.1 Tick Mark correct alternative	Marks	Bloom's Level	Cos

Q.1 Tick Mark correct alternative

1) _____ is the speculated result of the problem identified.   01   L2   CO1
   A) Problem Statement   B) Objectives
   C) Hypothesis   D) Rationale

2) Which of the following is a not part of preliminary pages of a report/thesis?   01   L1   CO1
   A) bibliography   B) table of contents
   C) abstract   D) certificate

3) _____ is that one in which there exists relationship between two variables one is called independent variable or cause and other is dependent variable or effect.   01   L1   CO1
   A) Complex Hypothesis   B) Null Hypothesis
   C) Working hypothesis   D) Simple hypothesis

ESE

4) _____is the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work.   01   L2   CO1
   A) Citation   B) Plagiarism
   C) Acknowledgement   D) Reference

5) According to _____ there is no relationship between dependent and independent variable.   01   L2   CO1
   A) null hypothesis   B) Alternative Hypothesis
   C) Logical Hypothesis   D) Statistical Hypothesis

6) Non Probability form of sampling is   01   L1   CO1
   A) Non Random Sampling   B) Quota Sampling
   C) Probability Sampling   D) Random Sampling

7) Data which is generated within company such as routine business activities is classified as   01   L3   CO2
   A) external primary data sources   B) internal primary data sources
   C) external secondary data sources   D) internal secondary data sources

8) Which ONE of these is the best description of secondary data?   01   L1   CO2
   A) Ordinary data.   B) Existing data.
   C) Omnibus data.   D) Ordinal data.

9) Which package is used to create a multicolumn document?   01   L2   CO2
   A) multicol   B) multicolumn
   C) multicols   D) multicolumn

10) To use \ in latex (textmode) output we use the command   01   L2   CO2
   A) $\$ B) \textbackslash
   C) $\backslash$ D) $ \\$

11) Which package is used to set papersize in LaTeX   01   L4   CO2
   A) setpaper   B) geometry
   C) fancyhdr   D) papersize

12) Between which tags does one write the content?   01   L2   CO2
   A) \begin{document}...\end{document}
   B) \begin(document)...\end(document)
   C) \begin{content}...\end{content}
   D) \begin{contents}...\end{contents}

| 13) | Which command is used to create a document of type 'article'? | 01 | L2 | CO2 |

13) Which command is used to create a document of type 'article'?   01   L2   CO2
   A) \documentclass{article}   B) \begin{article} ... \end{article}
   C) \document{article}   D) \documentclass{articles}

14) The value of coefficient of correlation lies between   01   L2   CO3
   A) 0 to 1   B) -1 to 0
   C) -1 to 0   D) -1 to 1

15) Number which occurs most frequently in a set of numbers is   01   L1   CO3
   A) mean   B) median
   C) mode   D) standard deviation

16) If mean of 6 numbers is 41 then sum of these numbers is   01   L5   CO3
   A) 246   B) 412
   C) 214   D) 240

17) The correlation between income and expenditure is   01   L4   CO3
   A) positive   B) 0
   C) negative   D) none

18) Find the mean in the following numbers: 01   L3   CO3
   19, 21, 18, 17, 18, 22, 46
   A) 25   B) 16
   C) 19   D) 23

19) What is the median in the following numbers: 01   L3   CO3
   9, 8, 15, 8, 20
   A) 8   B) 9
   C) 15   D) 20

20) The range of the data: 6,14,20,16,6,5,4,18,25,15, and 5 is   01   L2   CO3
   A) 4   B) 21
   C) 25   D) 20

Sanjay Ghodawat University, Kolhapur
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2019-20
EXM/P/09/01

Year and Program: F.Y. M.Sc.	School of Science	Department: Mathematics, Chemistry & Physics
Course Code: REM 502	Course Title: Research Methodology-II	Semester – II
Day and Date: Saturday 28|12|19	End Semester Examination (ESE)	Time: 2.5 hr 11am to 1.30pm Max Marks: 100

Instructions:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Non-programmable calculator is allowed.
4) LaTeX codes are given in *italic* font.

Section B

			Marks	Bloom's Level	Cos
Q.2		**Answer the following questions (Any Two).**			
	a)	Describe the techniques of defining a research problem.	8	L2	CO1
	b)	Explain with suitable example: (i) Characteristics of a good research report. (ii) Bibliography and its importance in context of research report.	8	L4	CO1
	c)	Explain the significance of a research report and narrate the various steps involved in writing such a report.	8	L4	CO1
Q.3		**Answer the following questions (Any Four).**			
	a)	Enumerate the different methods of collecting data.	4	L3	CO2
	b)	Differentiate between 'itemize' and 'enumerate' in LaTeX.	4	L2	CO2
	c)	What is ethics in research? Give one example.	4	L4	CO2
	d)	Write the output of the following code in LaTeX.	4	L3	CO2

i) *In the seventeenth century, Fermat conjectured that $n>2$, then there are no integers x, y, z for which $$x^n+y^n=z^n$$ This was proved in 1994 by Andrew Wiles.*

ii) *The sequence (x_n) defined by $$x_1=1,\quad x_2=1,\quad x_n=x_{n-1}+x_{n-2} \ (n>2)$$ is called the Fibonacci sequence.*

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				4	L4	CO2

e) Construct a LaTeX code to generate the following out put

$$\text{i)} \quad \int_0^1 x^2 + y^2 \, dx \qquad \text{ii)} \quad a_1^2 + a_2^2 = a_3^2$$

		8	L2	CO1

Q.4 a) Explain the process and methods of sampling.

		8	L3	CO2

b) Explain in detail the different documentclass available in LaTeX.

OR

		8	L4	CO2

b) List any four packages in LaTeX and explain with example the use of these packages.

Q.5   **Attempt any Two of the following.**

		8	L5	CO3

a) Calculate Karl Persons coefficient of correlation for the following data. Hence comment on it

x	28	45	40	38	35	33	40	32	36	33
y	23	34	33	34	30	26	28	31	36	35

		8	L5	CO3

b) Calculate the median from the following data

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Freq	15	35	60	84	96	127	198	250

		8	L2	CO3

c) Write a note on Measures of central tendency.

Q.6   **Attempt any Four of the following.**

		4	L6	CO3

a) What is correlation; explain its type by giving real life examples.

		4	L3	CO3

b) Write a note on standard deviation.

		4	L3	CO3

c) Find the mean of the following

x	8	10	15	20
f	5	8	8	4

		4	L3	CO3

d) Find the median from the following data

x	35	40	45	50	55
f	8	14	19	12	7

		4	L4	CO3

e) Explain with suitable example range and mean deviation of the data.

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ESE